AMENDMENT TO THE CLAIMS

Please replace the currently pending claims with the following claims:

1. (Currently Amended) An electrical circuit interconnect comprising:

an anchor portion coupled to a substrate in a substrate plane;

a release portion including a first end coupled to the anchor portion, the release portion including at least one in-plane curve wherein the in-plane curve is in a plane approximately parallel to the substrate plane, the release portion further including a lift ~~release~~ line where an uplift portion of the release portion begins to curve out of the plane of the substrate; and,

a spring tip coupled to a second end of the release portion, and wherein the direction of maximal curvature at the spring tip ~~oriented where a direction of maximal curvature of the spring tip~~ lies in a plane approximately perpendicular to the lift ~~release~~ line.

2. (Original) The electrical circuit interconnect of claim 1 wherein the release portion is released from the substrate such that an internal stress gradient in the uplift portion causes the uplift portion to curve out of the plane of the substrate.

3. (Original) The electrical circuit interconnect of claim 1 wherein the plurality of in plane curves in the uplift portion subtends an angle that totals approximately zero degrees

4. (Original) The electrical interconnect of claim 1 wherein the release portion is formed from one of molybdenum, tungsten, chromium, zirconium or nickel, or their alloys.

5. (Original) The electrical interconnect of claim 1 wherein the anchor portions of the electrical interconnect is coupled to an integrated circuit.

6. (Original) The electrical interconnect of claim 1 wherein the length of the uplift portion is less than 5mm

7. (Original) The electrical interconnect of claim 1 wherein the release portion further comprises:

an unlifted portion.

8. (Currently Amended) The electrical interconnect of claim 7 wherein the unlifted portion is prevented from uplifting during processing by a photoresist overhang.

9. (Original) The electrical interconnect of claim 1 wherein the release portion includes an aperture, the largest dimension of said aperture exceeding half the median width of the release portion.

10. (Original) The electrical interconnect of claim 9 wherein the largest dimension of said aperture exceeds the median width of the release portion.

11. (Original) The electrical interconnect of claim 9 wherein the aperture includes a plurality of flexible support structures on either side of the aperture, the flexible support structures curved in the plane of the substrate prior to release of the uplift portion.

12. (Original) The electrical interconnect of claim 1 wherein the spring tip is cut straight across, the spring tip remaining within 10 degrees of a plane parallel to the substrate plane.

13. (Original) The electrical interconnect of claim 1 wherein the release portion includes a plurality of small openings to facilitate etching of a release layer.

14. (Original) The electrical interconnect of claim 1 wherein the release portion is plated to increase stiffness.

15. (Currently Amended) An electrical interconnect comprising:

an anchor portion coupled to a substrate; and,

a flexible stressed metal forming a release portion coupled to the anchor portion, the release portion including at least one in-plane curved section wherein the in-plane curved section is in a plane approximately parallel to a surface of the substrate, the release portion also including an uplift portion such that the total of angles subtended by all ~~in-plane~~ curves in the uplift portion is approximately zero degrees.

16. (Original) The electrical interconnect of claim 15 wherein the uplift portion includes no curves.

17. (Original) The electrical interconnect of claim 15 wherein the release portion further comprises a planar portion.

18. (Original) The electrical interconnect of claim 17 wherein the planar portion is prevented from uplifting during processing by a photoresist overhang.

19. (Original) The electrical interconnect of claim 15 wherein the in-plane curves are on either side of an aperture in the release portion.

20. (Original) The electrical interconnect of claim 19 wherein the largest dimension of the aperture is over 50% of the median width of the release portion.

21. (Original) The electrical interconnect of claim 19 wherein the width of the aperture exceeds the median width of the release portion.

22. (Currently amended) The electrical interconnect of claim 15 wherein the release portion includes a ~~release~~ lift line, a direction of maximum curvature ~~of a~~ at a tip of the release portion ~~coupled to the release portion~~ oriented approximately perpendicular to the release line.

23. (Original) The electrical interconnect of claim 17 wherein the length of the uplift portion is between 0.1 micrometer and 5 mm and the width is between 0.02 micrometer and 1 mm.

24. (Original) The electrical interconnect of claim 15 wherein the release portion is plated with a material to improve conductivity.

25. (Original) The electrical interconnect of claim 20 further comprising:

a first flexible supports on a first side of the aperture, the first flexible support having a width less than 49% of the average width of the spring; and,

a second flexible support on a second side of the aperture, the second flexible support having a width less than 49% of the average width of the spring.

26. (Currently Amended) An electrical interconnect comprising:

an anchor portion anchored to a substrate in a substrate plane; and,

a stressed metal spring including a stress gradient coupled to the anchor portion, the spring including an aperture in the spring, the entire perimeter of the aperture bounded by spring material, the largest dimension of the aperture exceeding 50% of the width of the spring, and,

a tip coupled to an end of the stressed metal spring and oriented by the stress gradient such that the tip points in a direction that is non-parallel to the substrate plane.

27. (Original) The electrical interconnect of claim 26 wherein the width of the aperture is at least 0.05 micrometer

28. (Original) The electrical interconnect of claim 26 wherein the width of the aperture exceeds the average width of the spring.

29. (Currently amended) The electrical interconnect of claim 26 further comprising:

a first flexible supports on a first side of the aperture, the first flexible support having a width less than 49~~40~~% of the average width of the spring; and,

a second flexible support on a second side of the aperture, the second flexible support having a width less than 49 ~~40~~% of the average width of the spring.

30. (New) An electrical interconnect comprising:

an anchor portion coupled to a substrate in a substrate plane;

a stressed metal release portion including a first end coupled to the anchor portion, the release portion including at least one curve; and,

a spring tip coupled to the release portion, a stress gradient in the stressed metal release portion orienting the spring tip such that a direction of maximal curvature at the spring tip lies in a plane approximately perpendicular to a lift line, the stress gradient orienting the spring tip such that the direction of maximal curvature at the spring tip is non-planar with respect to the substrate plane.

31. (New) A method of making a stressed metal interconnect comprising:

depositing a release layer over a substrate in a substrate plane;

depositing a metal layer over the release layer, the metal layer including a plurality of sublayers to generate a stress gradient in the metal layer, the metal layer including at least one curve in the plane of the substrate;

etching away the release layer such that the stress gradient causes an uplift portion of the metal layer to uplift out of the substrate plane starting from a lift line, at least one end of the uplift portion of the metal layer forms a tip, the tip

oriented such that the direction of maximal curvature of the tip is approximately perpendicular to the lift line, the stress gradient orienting the tip such that the direction of maximal curvature is non-planar with respect to the substrate plane.

32. (New) The method of claim 31 wherein the at least one curve is in the uplift portion of the metal layer such that after etching, the at least one curve in no longer in the plane of the substrate.